



# Material Safety Data Sheet

MSDS Number: 7780 - 15

24 Hour Emergency Assistance: CHEMTREC - Domestic: (800) 424-9300  
24 Hour Emergency Assistance: CHEMTREC - International: (703) 527-3887  
General Assistance Number: (713) 241-4819

<b>SECTION 1</b>	<b>MATERIAL/COMPANY IDENTIFICATION</b>
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**MATERIAL IDENTITY:** SHELLSOL® B HT

**COMPANY ADDRESS:** Shell Chemical Company, P.O. Box 4320, Houston, TX 77210-4320, USA

<b>SECTION 2</b>	<b>COMPOSITION</b>
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COMPONENTS	CAS#	CONCENTRATION
Solvent Naphtha (Petroleum), Light Aliphatic	64742-89-8	100 %weight

**Comments:**  
Solvent naphtha (petroleum), light aliphatic is a complex stream of predominately C5 to C10 hydrocarbons; the exact composition and concentrations will vary. Contains n-hexane 22 - 30 %weight. Contains cyclohexane 0 - 13 %weight.

<b>SECTION 3</b>	<b>HAZARDS IDENTIFICATION</b>
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<p align="center"><b>EMERGENCY OVERVIEW</b></p> <p><b>Appearance &amp; Odor:</b> Colorless liquid. Hydrocarbon odor.</p> <p><b>Health Hazards:</b> Can cause severe lung damage and may be fatal if swallowed. May cause CNS depression.</p> <p><b>Physical Hazards:</b> EXTREMELY FLAMMABLE. Vapors are heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger.</p>
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<b>Health Effects</b>
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**Inhalation:**  
Breathing of high vapor concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and death. Vapors expected to be slightly irritating. Chronic hydrocarbon abuse (for example, sniffing glue or light hydrocarbons such as contained in this material) has been associated with irregular heart rhythms and potential cardiac arrest.

**Eye Contact:**  
May cause temporary discomfort or irritation to the eye.

**Skin Contact:**  
May be slightly irritating to the skin. Prolonged or repeated skin contact can cause defatting and drying of the skin which may result in a burning sensation and a dried, cracked appearance.

**Ingestion:**  
Liquid can directly enter the lungs (aspiration) when swallowed or vomited. Serious lung damage and possibly fatal chemical pneumonia (chemical pneumonitis) can develop if this occurs.

# ASTRO PRODUCT CODE # 10281

## Other Health Effects:

Exposure to high concentrations of n-hexane has been reported to cause peripheral and central nervous system toxicity in humans.

## Primary Target Organs:

The following organs and/or organ systems may be damaged by overexposure to this material.  
Central Nervous System, Heart, Peripheral Nervous System, Reproductive System

## Signs and Symptoms:

Peripheral nerve damage may be evidenced by loss or impairment of motor function (incoordination, unsteady walk or muscle weakness in the extremities) and/or loss of sensation in the arms and legs.

## Aggravated Medical Conditions:

Pre-existing eye, skin and respiratory disorders may be aggravated by exposure to this product. Impaired peripheral nerve functions from pre-existing disorders may be aggravated by exposure to this product.

## SECTION 4

## FIRST AID MEASURES

### Inhalation:

Move victim to fresh air. If the victim has difficulty breathing or tightness of the chest, is dizzy, vomiting or unresponsive, give 100% oxygen with rescue breathing or CPR as required and transport to the nearest medical facility.

### Eye:

Flush eyes with water while holding eyelids open. Rest eyes for 30 minutes. If redness, burning, blurred vision or swelling persist, transport to nearest medical facility for additional treatment.

### Skin:

Wipe off excess material from exposed area. Flush exposed area with water and follow by washing with soap if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment.

### Ingestion:

DO NOT induce vomiting. Have victim rinse mouth out with water, then drink sips of water to remove taste from mouth. In general no treatment is necessary unless large quantities are swallowed, however, get medical advice. If the victim is coughing, choking, has shortness of breath, or difficulty breathing, transport to the nearest medical facility for additional treatment. If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F, shortness of breath, chest congestion or continued coughing or wheezing. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

### Note to Physician:

Light hydrocarbons like this one have been associated with cardiac sensitization in abuse situations. Hypoxia or the injection of adrenaline-like substances enhances these effects. Refer to Section 3.

## SECTION 5

## FIRE FIGHTING MEASURES

**Flash Point:** < 0°F / < -17.78°C

**Autoignition Temperature:** 534°F / 278.89°C

**Flammability in Air:** 1 - 7 %volume

### Extinguishing Media:

Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames. Do not use a direct stream of water. Material will float and can be re-ignited on surface of water.

## ASTRO PRODUCT CODE # 10281

### Fire Fighting Instructions:

**EXTREMELY FLAMMABLE.** Clear fire area of all non-emergency personnel. Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure, NIOSH approved, self-contained breathing apparatus. Containers exposed to intense heat from fires should be cooled with large quantities of water to prevent weakening of container structure which could result in container rupture.

### Unusual Fire Hazards:

Vapors are flammable and heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger.

## SECTION 6

## ACCIDENTAL RELEASE MEASURES

**EXTREMELY FLAMMABLE.** Vapors are flammable and heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger.

### Protective Measures:

Isolate hazard area and deny entry to unnecessary or unprotected personnel. Eliminate potential sources of ignition (no smoking, flares, sparks or flames in immediate area). Stay upwind and keep out of low areas. Handling equipment must be bonded and grounded to prevent sparking.

Wear appropriate personal protective equipment (refer to Section 8) when responding to spills.

### Spill Management:

Shut off source of leak if safe to do so. Dike and contain spill. Use water spray (fog) to reduce vapors or divert vapor cloud drift. If vapor cloud forms, use water fog to suppress or blanket spill area with foam. Remove with vacuum trucks or pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly. Flush area with water to remove trace residue. Contain run-off from residue flush and dispose of properly. Prevent entry into waterways, sewer, basements or confined areas. Remove contaminated soil to remove contaminated trace residues. Dispose of in same manner as material. For small spills: Soak up residue with an absorbent such as clay, sand or other suitable material. Place in non-leaking container and seal tightly for proper disposal.

### Disposal:

Proper disposal should be evaluated based on regulatory status of this material (refer to Section 13), potential contamination from subsequent use and spillage, and regulations governing disposal in the local area.

### Reporting:

This material is covered by EPA's Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Petroleum Exclusion. Therefore, releases to the environment may not be reportable under CERCLA. Notify authorities if any exposures to the general public or environment occurs or is likely to occur.

## SECTION 7

## HANDLING AND STORAGE

Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated contact with eyes, skin and clothing. Wash thoroughly after handling.

### Handling:

Surfaces that are sufficiently hot may ignite liquid material. Vapors are flammable and heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger.

Keep away from heat, sparks and flame. Extinguish pilot lights, cigarettes and turn off other sources of ignition prior to use and until all vapors have dissipated. Use explosion-proof ventilation to prevent vapor accumulation while in use. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. Wash with soap and water before eating, drinking, smoking, applying cosmetics, or using toilet facilities. Launder contaminated clothing before reuse. Air-dry contaminated clothing in a well-ventilated area before laundering. Static electricity may accumulate and create a fire hazard. Bond and ground handling equipment and transfer containers to prevent sparking.

### Storage:

Keep containers closed when not in use.

# ASTRO PRODUCT CODE # 10281

Ground fixed equipment.

## Container Warnings:

Containers, even those that have been emptied, can contain explosive vapors. Do not cut, drill, grind, weld or perform similar operations on or near containers.

## SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

### Occupational Exposure Limits

Material	Source	TWA	STEL	Ceiling	Notation
Cyclohexane	ACGIH - TLV	300 ppm (v)			
Cyclohexane	OSHA - PEL	300 ppm (v)			
n-Hexane	ACGIH - TLV	50 ppm (v)			Skin
n-Hexane	OSHA - PEL	500 ppm (v)			
n-Hexane	OSHA - PEL- Interim Standard	50 ppm (v)			

Shell has adopted as Interim Standards, the OSHA PELs that were established in 1989 and later rescinded.

### Exposure Controls

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Appropriate measures include:

Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits.

### Personal Protective Equipment

#### Eye Protection:

In accordance with good industrial hygiene practices, precautions should be taken to avoid eye contact.

#### Skin Protection:

Use protective clothing which is chemical resistant to this material. Selection of protective clothing depends on potential exposure conditions and may include gloves, boots, suits and other items. The selection(s) should take into account such factors as job task, type of exposure and durability requirements.

Published literature, test data and/or glove and clothing manufacturers indicate protection is provided by:  
Nitrile Rubber

#### Respiratory Protection:

If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, an approved respirator must be worn. Respirator selection, use and maintenance should be in accordance with the requirements of the OSHA Respiratory Protection Standard, 29 CFR 1910.134.

Types of respirator(s) to be considered in the selection process include:

Air-Purifying Respirator for Organic Vapors, Supplied-Air Respirator, Self-Contained Breathing Apparatus (SCBA) - for use in environments with unknown concentrations or emergency situations.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

**Appearance & Odor:** Colorless liquid. Hydrocarbon odor.

<b>Autoignition Temperature</b>	534 °F	<b>Boiling Point</b>	147 - 176 °F
<b>Evaporation Rate</b>	8.6 [vs. n-Butyl Acetate = 1]	<b>Flammability in Air</b>	1 - 7 %volume
<b>Flash Point</b>	< 0 °F [Tagliabue Closed Cup]	<b>Solubility (in Water)</b>	Negligible

# ASTRO PRODUCT CODE # 10281

Specific Gravity	0.695 @ 60 °F	Stability	Stable
Vapor Density (Air=1)	2.9	Vapor Pressure	140 mmHg @ 68 °F
VOC Content	100 % 5.8 lb/gal @ 60 °F		

## SECTION 10 REACTIVITY AND STABILITY

**Stability:**

Material is stable under normal conditions.

**Conditions to Avoid:**

Prevent vapor accumulation. Avoid heat, sparks, open flames and other ignition sources.

**Materials to Avoid:**

Avoid contact with strong oxidizing agents.

**Hazardous Decomposition Products:**

Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases, including carbon monoxide, carbon dioxide and other organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

## SECTION 11 TOXICOLOGICAL INFORMATION

### Acute Toxicity

Material Tested	Effects	Test Results
Solvent Naphtha (Petroleum), Light Aliphatic	Dermal - No deaths*	3.4 g/kg (Rabbit)
Solvent Naphtha (Petroleum), Light Aliphatic	Inhalation - LC50	73,680 ppm (v) (Rat) 4 hour(s)
Solvent Naphtha (Petroleum), Light Aliphatic	Oral - No deaths*	17 g/kg (Rat)

\* No deaths at highest tested dose.

**Eye Irritation:**

slight irritation [Rabbit]

**Skin Irritation:**

slightly irritating [Rabbit, 24 hour(s)]

# ASTRO PRODUCT CODE # 10281

## Repeat Dose Testing:

While there is no evidence that industrially acceptable levels of light hydrocarbon vapors (e.g., the occupational exposure limit) have produced cardiac effects in humans, animal studies have shown that inhalation of high levels produced cardiac sensitization. Such sensitization may cause fatal changes in heart rhythms, which was shown to be enhanced by hypoxia or the injection of adrenaline-like substances. Repeated exposures of rabbits to high vapor concentrations of cyclohexane caused a slight increase in blood clotting time and minor microscopic changes in the liver and kidneys. Exposure of rats to a similar solvent (commercial hexane) by inhalation caused lesions to the nasal mucosa and larynx, and nephropathy in male rats (which may not be relevant to humans). Oral ingestion of technical hexane caused lesions to the liver, kidney, peripheral nerves and testes.

## Carcinogenicity:

In a 2 species cancer study, chronic inhalation of a similar hydrocarbon solvent (commercial hexane) resulted in a treatment-related increase in liver tumors in female mice. The significance of this to humans is unknown.

## Reproductive and Developmental Toxicity:

In animal testing, developmental effects were observed only at dose levels that were maternally toxic. Material may adversely affect male reproductive system based on testing in laboratory animals. N-hexane was reported to produce testicular effects in rats following single and repeated exposures to high vapor concentrations.

## Neurotoxicity:

Central nervous system toxicity of n-hexane in humans was evidenced by effects on the visual system (increased evoked potentials, color perception). Studies with the component, n-hexane, have demonstrated enhanced peripheral neuropathy (earlier onset, more severe effects) with co-exposure to methyl ethyl ketone, methyl isobutyl ketone and lead acetate.

<b>SECTION 12</b>	<b>ENVIRONMENTAL FATE AND EFFECTS</b>
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This section will be updated as ecological reviews are completed.

<b>SECTION 13</b>	<b>DISPOSAL CONSIDERATIONS</b>
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## Product Disposal:

Under EPA RCRA (40 CFR 261) if this material becomes a waste material, it would be an ignitable hazardous waste, hazardous waste number D001. Refer to the latest EPA or state regulations regarding proper disposal.

<b>SECTION 14</b>	<b>TRANSPORT INFORMATION</b>
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## US Department of Transportation Classification:

**Proper Shipping Name:** Petroleum Distillates, N.O.S.  
**Technical Names (s):** PETROLEUM NAPHTHA  
**Identification Number:** UN1268  
**Hazard Class/Division:** 3 (Flammable Liquid)  
**Packing Group:** II

**Oil:** This material is an 'OIL' under 49 CFR Part 130 when transported in a container of 3500 gallon capacity or greater.

**Emergency Response Guide # 128**

## International Air Transportation Association Classification:

**Proper Shipping Name:** Petroleum Distillates, N.O.S.  
**Technical Name (s):** PETROLEUM NAPHTHA  
**Identification Number:** UN1268  
**Hazard Class/Division:** 3 (Flammable Liquid)  
**Packing Group:** II

## International Maritime Organization - IMDG:

**Proper Shipping Name:** Petroleum Distillates, N.O.S.  
**Technical Name (s):** PETROLEUM NAPHTHA

# ASTRO PRODUCT CODE # 10281

Identification Number: UN1268  
Hazard Class/Division: 3 (Flammable Liquid)  
Packing Group: II

## SECTION 15 REGULATORY INFORMATION

The regulatory information provided is not intended to be comprehensive. Other federal, state and local regulations may apply to this material.

### Federal Regulatory Status

**Resource Conservation & Recovery Act (RCRA) Classification:**  
D001 (Ignitable Hazardous Waste).

**Superfund Amendment & Reauthorization Act (SARA) Title III:**

**SARA Hazard Categories(311/312):**  
Fire Hazard. Immediate (Acute) Health Hazard. Delayed (Chronic) Health Hazard.

**SARA Toxic Release Inventory(TRI) (313):**  
Cyclohexane (110-82-7) 0 - 13 %weight  
n-Hexane (110-54-3) 22 - 30 %weight

**Toxic Substances Control Act (TSCA) Inventory Status:**  
This material is listed on the EPA TSCA Inventory of Chemical Substances.

### State Regulatory Status

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

**New Jersey Right-To-Know Chemical List:**  
Cyclohexane (110-82-7) 0 - 13 %weight  
n-Hexane (110-54-3) 22 - 30 %weight

**Pennsylvania Right-To-Know Chemical List:**  
2-Methyl Pentane (107-83-5) 15 - 23 %weight  
3-Methyl Pentane (96-14-0) 13 - 20 %weight  
Cyclohexane (110-82-7) 0 - 13 %weight Environmental Hazard  
n-Hexane (110-54-3) 22 - 30 %weight

## SECTION 16 OTHER INFORMATION

HMIS Rating (Health, Fire, Reactivity): 1, 3, 0  
NFPA Rating (Health, Fire, Reactivity): 1, 3, 0

**Revision#: 15**  
**Revision Date: 11/08/2001**  
**Revisions since last change (discussion):** This MSDS has been revised because Shell Chemical Company has made changes to the Material Safety Data Sheet document template. There are no changes to the health, safety, precautionary data, or regulatory data. We do, however, encourage you to take the opportunity to reread the sheet and review the information.

**Product Codes: Q1246**

## ASTRO PRODUCT CODE # 10281

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof.

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